

## CLAIMS

1.- Compound having the general formula (I):

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or its geometric isomers, its optically active forms, diastereoisomers, its racemic forms, or its pharmaceutically acceptable salts, wherein R<sup>1</sup> is selected from the group consisting of: C<sub>2</sub>-C<sub>9</sub> alkandiamine, C<sub>2</sub>-C<sub>6</sub> amine; X is selected from the group consisting of: -S-S-, -S-, -CH<sub>2</sub>-, -CH<sub>2</sub>-CH<sub>2</sub>-; m is an integer greater than zero and lower than eight; Ar represents an aromatic group; R<sup>1</sup> comprises a nitrogen linked directly to the carbonyl.

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2.- Compound according to claim 1, wherein X represents -S-S-.

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3.- Compound according to claim 1 or 2, wherein m is an integer greater than two and lower than five.

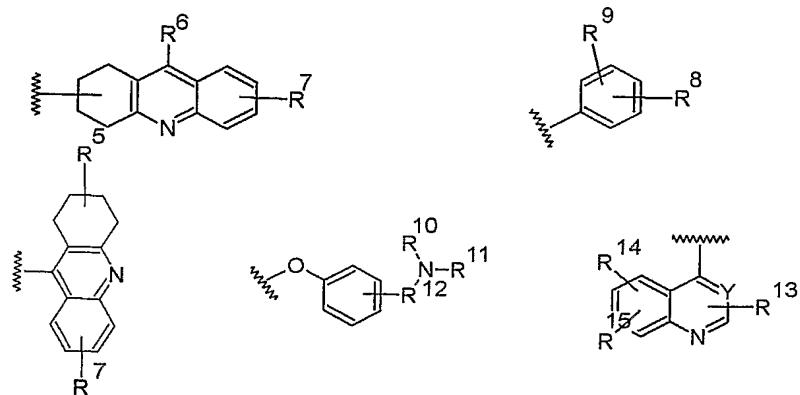
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4.- Compound according to claim 3, wherein m is four.

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5.- Compound according to one of the previous claims, wherein Ar presents a formula selected from the group consisting of:

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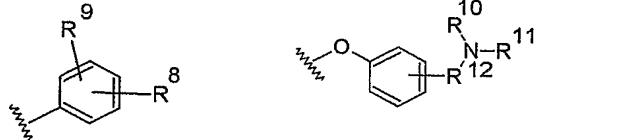


wherein R<sup>5</sup> is selected from the group consisting of: hydrogen, amine, nitroalkyl, -NH<sub>2</sub>, nitro, halogen, hydroxy; R<sup>6</sup> is

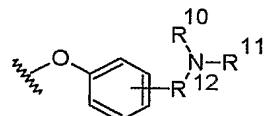
selected from the group consisting of: hydrogen, amine, alkandiamine, -NH<sub>2</sub>; R<sup>7</sup> is selected from the group consisting of: hydrogen, group having an electron attractor inductive effect; R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup>, R<sup>8</sup> and R<sup>9</sup> are selected, each independently of the others, from the group consisting of: hydrogen, hydroxy, halogen, alkoxy, alkyl, nitroalkyl, cyanoalkyl, nitro, cyano; R<sup>10</sup> and R<sup>11</sup>, are selected, each independently of the other, from the group consisting of: hydrogen, C<sub>1</sub>-C<sub>4</sub> alkyl; R<sup>12</sup> represents a C<sub>1</sub>-C<sub>4</sub> alkyl; Y is selected from the group consisting of -CH- and -N-.

6.- Compound according to claim 5, wherein Ar presents a formula selected from the group consisting of:

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7.- Compound according to claim 6, wherein Ar presents the formula:



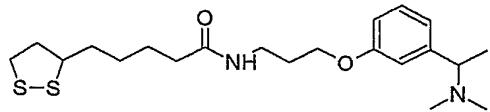
25 wherein R<sup>1</sup> represents a C<sub>2</sub>-C<sub>6</sub> amine.

8.- Compound according to claim 7, wherein R<sup>1</sup> presents the formula -N(CH<sub>2</sub>)<sub>n</sub>-, wherein the nitrogen is directly linked to the carbonyl and n is an integer greater than one and smaller than five.

9.- Compound according to claim 8, wherein n is three; R<sup>10</sup> and R<sup>11</sup> represent, each, a respective methyl; R<sup>12</sup> represents an ethyl and is linked at the meta position with respect to the oxygen.

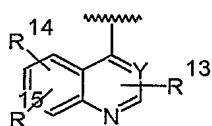
10.- Compound according to claim 9, and having the following formula:

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11.- Compound according to claim 6, wherein Ar presents the formula:

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wherein Y represents N, R<sup>1</sup> represents an alkandiamine having the formula -NR<sup>3</sup>-R<sup>2</sup>-NR<sup>4</sup>-; R<sup>2</sup> represents a C<sub>2</sub>-C<sub>5</sub> alkyl; R<sup>3</sup> and R<sup>4</sup> are selected, each independently of the other, from the group consisting of: hydrogen, methyl; R<sup>13</sup>, R<sup>14</sup>, R<sup>15</sup> are selected, each independently of the others, from the group consisting of: hydrogen, hydroxy, halogen, C<sub>1</sub>-C<sub>4</sub> alkoxy, C<sub>1</sub>-C<sub>4</sub> alkyl.

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12.- Compound according to claim 11, wherein R<sup>2</sup> represents a linear propyl; R<sup>3</sup> and R<sup>4</sup> each represent a hydrogen; R<sup>13</sup> represents a halogen; R<sup>14</sup> and R<sup>15</sup> are selected, each independently of the other, from the group consisting of: halogen, hydroxy, C<sub>1</sub>-C<sub>4</sub> alkoxy.

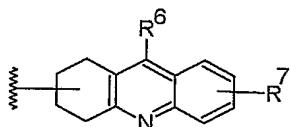
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13.- Compound according to claim 11 or 12, wherein R<sup>13</sup> represents a chlorine; R<sup>14</sup> and R<sup>15</sup> represent, each, a respective methoxy.

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14.- Compound according to claim 5, wherein Ar presents the formula:

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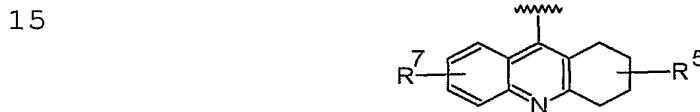


$R^7$  is selected from the group consisting of: hydrogen, C<sub>1</sub>-C<sub>4</sub> alkoxy, halogen;  $R^6$  is selected from the group consisting of: -NH<sub>2</sub>, alkandiamine, amine;  $R^1$  represents a C<sub>1</sub> amine.

5 15.- Compound according to claim 14, wherein  $R^6$  is selected from the group consisting of: -NH<sub>2</sub> and amine C<sub>1</sub>-C<sub>4</sub>.

10 16.- Compound according to claim 14, wherein  $R^7$  is a chlorine situated in position 6;  $R^6$  represents -NH<sub>2</sub>;  $R^1$  represents -NH-CH<sub>2</sub>-, wherein the nitrogen is linked to the carbonylic carbon.

17.- Compound according to claim 5, wherein Ar presents the formula:



wherein  $R^1$  represents a C<sub>2</sub>-C<sub>6</sub> alkandiamine.

20 18.- Compound according to claim 17, wherein  $R^1$  represents a C<sub>3</sub>-C<sub>4</sub> alkandiamine.

25 19.- Compound according to claim 17 or 18, wherein  $R^1$  presents the formula -NR<sup>3</sup>-R<sup>2</sup>-NR<sup>4</sup>-, wherein R<sup>2</sup> represents a C<sub>2</sub>-C<sub>4</sub> alkyl, R<sup>3</sup> and R<sup>4</sup> are selected, each independently of the other, from the group consisting of: hydrogen, methyl.

30 20.- Compound according to claim 19, wherein R<sup>3</sup> and R<sup>4</sup> represent, each, a respective hydrogen.

21.- Compound according to claim 19 or 20, wherein R<sup>2</sup> represents -(CH<sub>2</sub>)<sub>3</sub>-.

35 22.- Compound according to one of the claims from 17 to 21, wherein  $R^7$  represents a group having an electron withdrawing inductive effect.

23.- Compound according to claim 22, wherein R<sup>7</sup> is selected from the group consisting of: halogen, C<sub>1</sub>-C<sub>4</sub> alkoxy.

5 24.- Compound according to claim 23, wherein R<sup>7</sup> represents a halogen.

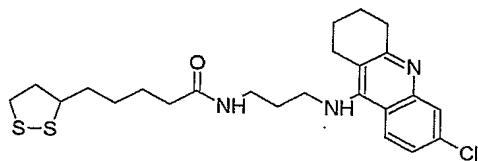
10 25.- Compound according to one of the claims from 17 to 21, wherein R<sup>7</sup> is selected from the group consisting of: halogen, hydrogen, methoxy; R<sup>5</sup> is selected from the group consisting of: hydrogen, amine, nitroalkyl, halogen, hydroxy.

15 26.- Compound according to one of the claims from 17 to 25, wherein R<sup>7</sup> is situated in position 6.

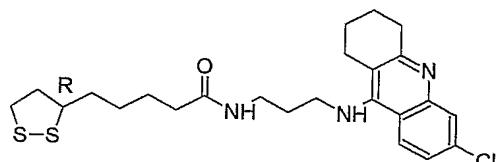
27.- Compound according to one of the claims from 17 a 26, wherein R<sup>5</sup> is selected from the group consisting of: hydrogen, C<sub>1</sub>-C<sub>4</sub> amine, C<sub>1</sub>-C<sub>4</sub> nitroalkyl, -NH<sub>2</sub>, nitro, halogen.

20 28.- Compound according to one of the claims from 17 to 26, wherein R<sup>5</sup> is selected from the group consisting of: hydrogen, halogen.

25 29.- Compound according to claim 28, and having the following formula:

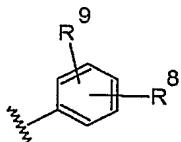


30.- Compound according to claim 29, in form R:



31.- Compound according to claim 6, wherein Ar presents the formula:

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wherein R<sup>1</sup> represents a C<sub>3</sub>-C<sub>9</sub> alkandiamine.

10 32.- Compound according to claim 31, wherein R<sup>1</sup> represents a C<sub>6</sub>-C<sub>8</sub> alkandiamine.

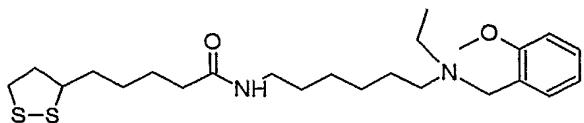
15 33.- Compound according to claim 31 or 32, wherein R<sup>1</sup> presents the formula -NR<sup>16</sup>-R<sup>17</sup>-NR<sup>18</sup>-R<sup>19</sup>-, wherein R<sup>19</sup> is linked to Ar and -NR<sup>16</sup> is linked to the carboxylic carbon; R<sup>17</sup> is a C<sub>2</sub>-C<sub>7</sub> alkyl; R<sup>16</sup> and R<sup>18</sup> are selected, each independently of the other, from the group consisting of: C<sub>1</sub>-C<sub>3</sub> alkyl, hydrogen; R<sup>19</sup> represents a C<sub>1</sub>-C<sub>3</sub> alkyl.

20 34.- Compound according to claim 33, wherein R<sup>17</sup> is a C<sub>3</sub>-C<sub>6</sub> alkyl; R<sup>16</sup> represents a hydrogen; R<sup>18</sup> is selected from the group consisting of: ethyl, methyl, hydrogen; R<sup>19</sup> represents a methyl.

25 35.- Compound according to one of the claims from 31 a 34, wherein R<sup>9</sup> is selected from the group consisting of: hydrogen, hydroxy, halogen, C<sub>1</sub>-C<sub>4</sub> alkoxy; R<sup>8</sup> is selected from the group: hydroxy, halogen, C<sub>1</sub>-C<sub>4</sub> alkoxy.

30 36.- Compound according to claim 35, wherein R<sup>9</sup> represents a hydrogen and R<sup>8</sup> represents a methoxy situated in ortho or meta position with respect to the remaining part of the compound.

35 37.- Compound according to claim 36, and having the following formula:



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38.- Compound having the general formula (I), as defined in any one of the claims from 1 to 37, for use as a medicament.

10 39.- Use of a compound having the general formula (I), as defined in any one of the claims from 1 to 37, for the production of a pharmaceutical preparation for the treatment of Alzheimer's disease.

15 40.- Use of a compound having the general formula (I), as defined in any one of the claims from 1 to 37, for the production of a pharmaceutical preparation for the treatment of Alzheimer's disease in mammals.

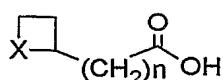
20 41.- Use of a compound having the general formula (I), as defined in any one of the claims from 1 to 37, for the production of a pharmaceutical preparation for the treatment of pathologies characterised by deposits of  $\beta$ -amiloid (A $\beta$ ) in mammals.

25 42.- Pharmaceutical preparation comprising a compound having general formula (I), as defined in any one of the claims from 1 to 37, or a pharmaceutically acceptable salt, and an excipient and/or pharmaceutically acceptable diluent.

30 43.- Method for the treatment of Alzheimer's disease in a mammal; the method comprises administering to said mammal an efficacious quantity of a compound having general formula (I), as defined in any one of the claims from 1 to 37.

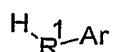
35 44.- Method for the synthesis of a compound having general formula (I), as defined in any one of the claims from 1 to 37,

comprising an addition phase wherein a compound having the general formula (II):



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is reacted with a compound having the general formula (III):



in basic conditions.

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